12 Watt Dual Output DC/DC Converters

3355 Vincent Road, Pleasant Hill, CA 94523-4389 800-542-3355 Telephone (415)932-3911 FAX: (415)932-6017

T-57-11

FEATURES

- Low Noise Output
- LC Type Input Filter
- Six-Sided Shielded Steel Case
- Very Wide Input Voltage Ranges (9-27, 12-36, 18-54, and 24-72)
- High Efficiency Operation
- Long Term Output Fault Survival
- 5 Year Warranty

SELECTION CHART

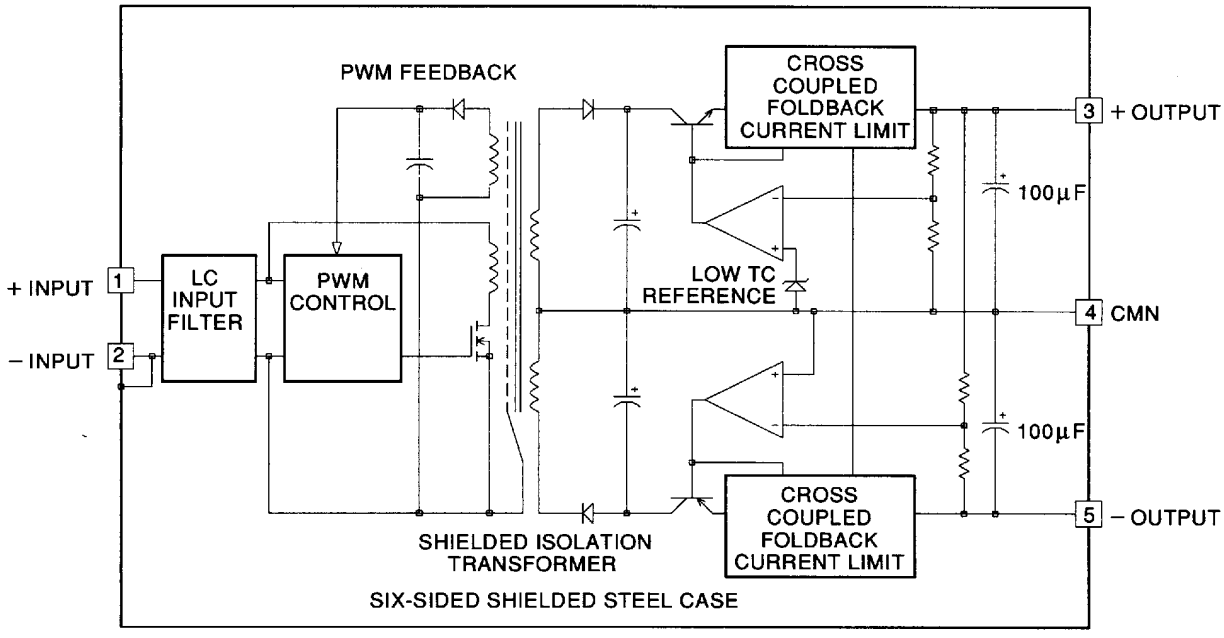
MODEL	INPUT RANGE VDC		OUTPUTS VDC	OUTPUTS mA	CASE
	MIN	MAX			
12D12.500	9.00	27.00	±12.0	±500	B1
12D15.400	9.00	27.00	±15.0	±400	B1
24D12.500	12.00	36.00	±12.0	±500	B1
24D15.400	12.00	36.00	±15.0	±400	B1
28D5.1000	18.00	54.00	±5.0	±1000	B1
48D12.500	24.00	72.00	±12.0	±500	B1
48D15.400	24.00	72.00	±15.0	±400	B1

DESCRIPTION

These 10 and 12 Watt Dual Output DC/DC converters are designed for telecommunications, medical or industrial equipment and instrumentation systems. The converters feature very wide input voltage ranges.

The converter consists of a hi-speed chopper circuit using state of the art MOSFET technology, isolation transformer, and high regulation linear post regulator. This provides for very low noise and ultra stable output voltages.

12 WATT DUAL SERIES BLOCK DIAGRAM



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INPUT PARAMETERS (1)							
MODEL		**12D12.500**	**12D15.400**	**24D12.500**	**24D15.400**		**UNITS**
Voltage Range	MIN MAX	9.00 27.00		12.00 36.00			VDC
Reflected Ripple, 0-20MHz BW	TYP MAX	30 75		20 45			mA p-p
Input Current Full Load No Load	TYP TYP	1480 68	1440 68	710 40	700 40		mA
Efficiency	TYP	70					%
Switching Frequency	TYP	85		100			kHz
Maximum Input Over Voltage, 100mS No Damage	MAX	33		40			VDC
Turn-on Time, 1% Output Error	TYP	60					mSec
Recommended Fuse		(2)					
MODEL		**28D5.1000**		**48D12.500**	**48D15.400**		**UNITS**
Voltage Range	MIN MAX	18.00 54.00		24.00 72.00			VDC
Reflected Ripple, 0-20MHz BW	TYP MAX	20 50		15 30			mA p-p
Input Current Full Load No Load	TYP TYP	600 40		360 24	350 24		mA
Efficiency	TYP	60		70			%
Switching Frequency	TYP	87		100			kHz
Maximum Input Over Voltage, 100mS No Damage	MAX	60		80			VDC
Turn-on Time, 1% Output Error	TYP	60					mSec
Recommended Fuse		(2)					

OUTPUT PARAMETERS (1)							
MODEL		**28D5.1000**	**12D12.500 24D12.500 48D12.500**		**12D15.400 24D15.400 48D15.400**		**UNITS**
Output Voltage		±5	±12		±15		VDC
Rated Current (3)	MIN MAX	0 +1100/-900	0 ±500		0 ±400		mA
Voltage Range 100% Load	MIN TYP MAX	4.95 5.00 5.05	11.90 12.00 12.10		14.90 15.00 15.10		VDC
Output Balance (Plus to Minus Output, Full Load)	TYP MAX	0.6 1.0					%
Load Regulation 0-100% Load	TYP MAX	0.05 0.10	0.02 0.07		0.02 0.07		%
Line Regulation Vin = Min-Max VDC	TYP MAX	0.02 0.07					%
Short Term Stability (4)	TYP	0.02					%
Long Term Stability	TYP	0.3					%/kHrs
Transient Response (5)	TYP	20					µSec
Dynamic Response (6)	TYP	20					mV peak
Input Ripple Rejection (7)	TYP	60					dB
Noise, 0-20MHz BW	TYP MAX	10 40					mV p-p
Temperature Coefficient	TYP MAX	100 300	50 150		50 150		ppm/°C
Short Circuit Protection to Common for all Outputs		Continuous, 8 Hours Minimum Current Limit					

NOTES

(1) All parameters measured at 25°C, nominal input voltage and full rated load unless otherwise noted. Refer to the Calex Application Notes for the definition of terms, measurement circuits and other information.

(2) Determine the correct fuse size by calculating the maximum DC current drain at low line input, maximum load then adding 20 to 25 percent.

(3) No minimum load required.

(4) Short term stability is specified after a 30 minute warm-up at full load.

(5) Transient response is defined as the time for the output to settle from a 100% step load change to a 1% error band (rise time of step = 2 µSec).

(6) Dynamic response is defined as the peak overshoot during a transient as defined in note 6 above.

(7) The input ripple rejection is specified for DC to 120Hz ripple with a modulation amplitude of 1% of Vin.

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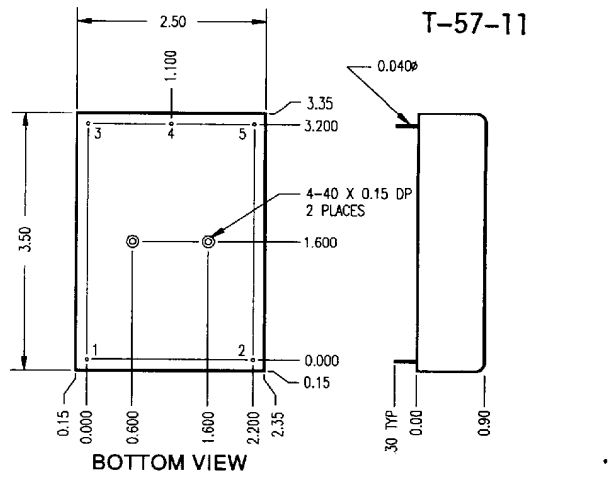
CALEX

GENERAL SPECIFICATIONS (1)			
MODEL		**ALL MODELS**	**UNITS**
ISOLATION			
Isolation Voltage Input-Output 10µA Leakage	MIN	500	VDC
Input to Output Capacitance	TYP	120	pF
ENVIRONMENTAL			
Case Operating Range, No Derating	MIN MAX	-25 80	°C
Case Functional Range (8)	MIN MAX	-40 85	°C
Storage Range	MIN MAX	-55 100	°C
Thermal Impedance (9)	TYP	6	°C/Watt
Unit Weight	TYP	6.5	oz
Case		B1	
Mounting Kits		MK215-022 & MK215-08B	

(8) The functional temperature range is intended to give an additional data point for use in evaluating this power supply. At the low functional temperature the power supply will function with no side effects, however sustained operation at the high functional temperature will reduce expected operational life. The data sheet specifications are not guaranteed over the functional temperature range.

(9) The case thermal impedance is specified as the case temperature rise over ambient per package watt dissipated.



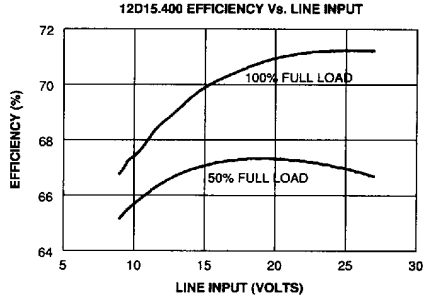
Mechanical tolerances unless otherwise noted:

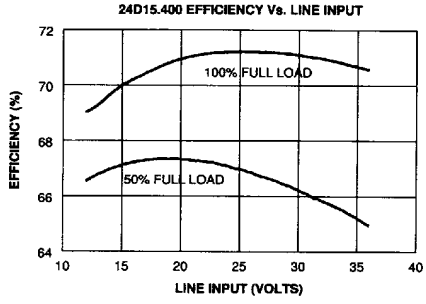
X.XX dimensions: ±0.020 inches

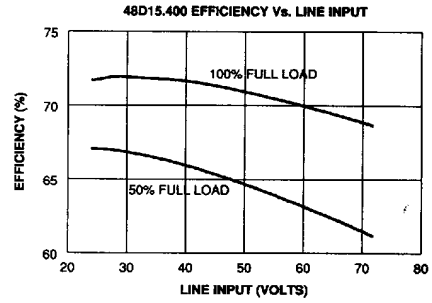
X.XXX dimensions: ±0.005 inches

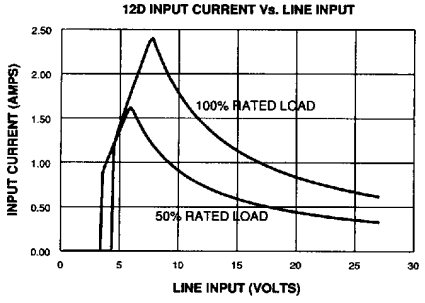
Seal around terminals is not hermetic. Do not immerse units in any liquid.

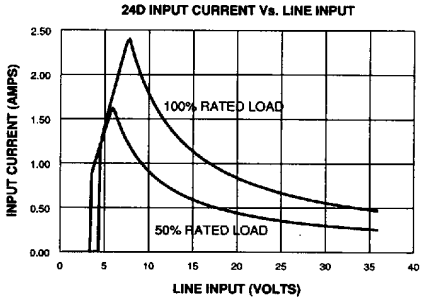
PIN	FUNCTION
1	+INPUT
2	-INPUT
3	+OUTPUT
4	CMN
5	-OUTPUT

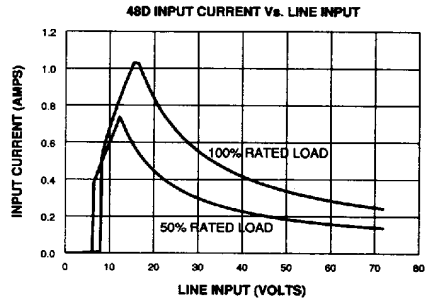












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Typical Performance (Tc=25° C; Full Rated Load).